UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
2002/01267

December 4, 2002

Mr. Fred Patron
U.S. Department of Transportation
Federal Highway Administration
The Equitable Center, Suite 100
530 Center Street NE
Salem, OR 97301

Re: Endangered Species Action Section 7 Formal Consultation and Magnuson-Stevens Act Essential Fish Habitat Consultation on the John Moore Road to Pioneer Mountain Loop Project, Simpson Creek, Lincoln County, Oregon.

Dear Mr. Patron:

Enclosed is a biological opinion (Opinion) prepared by the National Marine Fisheries Service (NOAA Fisheries) pursuant to section 7 of the Endangered Species Act (ESA) for the John Moore Road to Pioneer Mountain Loop Project, Simpson Creek, Lincoln County, Oregon. NOAA Fisheries concludes in this Opinion that the proposed action is not likely to jeopardize Oregon Coast (OC) coho (*Oncorhynchus kisutch*). Pursuant to section 7 of the ESA, NOAA Fisheries has included reasonable and prudent measures with non-discretionary terms and conditions that NOAA Fisheries believes are necessary and appropriate to minimize the potential for incidental take associated with this project.

This Opinion also serves as consultation on essential fish habitat (EFH) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and its implementing regulations (50 CFR Part 600). NOAA Fisheries concluded that the proposed action will adversely affect designated EFH for coho salmon. As required by section 305(b)(4)(A) of the MSA, included are conservation recommendations that NOAA Fisheries believes will avoid, minimize, mitigate, or otherwise offset adverse effects on EFH resulting from the proposed action. As described in the enclosed consultation, 305(b)(4)(B) of the MSA requires that a Federal action agency must provide a detailed response in writing within 30 days after receiving an EFH conservation recommendation.

Please direct any questions regarding this letter to Tom Loynes of my staff in the Oregon Habitat Branch at 503.231.6892.

Sincerely,

for D. Robert Lohn
Regional Administrator

cc: Molly Cary, ODOT
Nick Testa, ODOT
Patti Caswell, ODOT
Brian Bauman, ODOT
Randy Reeve, ODFW

Endangered Species Act - Section 7 Consultation
&
Magnuson-Stevens Act
Essential Fish Habitat Consultation

BIOLOGICAL OPINION

John Moore Road to Pioneer Mountain Loop Project,
Simpson Creek, Lincoln County, Oregon

Agency:	Federal Highway Administration
Consultation Conducted By:	NOAA Fisheries, Northwest Region
Date Issued:	December 4, 2002
Issued by:	for D. Robert Lohn Regional Administrator
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1. ENDANGERED SPECIES ACT

1.1 Background

On October 25, 2002, the National Marine Fisheries Service (NOAA Fisheries) received an e-mail followed by a letter (via fax) dated November 14, 2002, from the Federal Highway Administration (FHWA) requesting formal consultation under section 7 of the Endangered Species Act (ESA) on a culvert replacement project on Simpson Creek in Lincoln County, Oregon. In the October e-mail, the FHWA determined that Oregon Coast (OC) coho (*Oncorhynchus kisutch*) may occur within the project area, and that the proposed project is "likely to adversely affect" (LAA) the subject listed species. OC coho salmon were listed as threatened on August 10, 1998 (63 FR 42587) and protective regulations went in to effect on July 10, 2000 (65 FR 42422). The objective of this Opinion is to determine whether the subject action is likely to jeopardize the continued existence of the above listed species.

1.2 Proposed Action

The project is located in the Simpson Creek and Yaquina River watersheds. The project corridor is north of the Yaquina River and passes over several tributaries of the river including Simpson Creek, Beaver Creek, Little Beaver Creek, and Depot Slough. The Oregon Department of Transportation (ODOT) proposes to repair roadway surfaces on the Corvallis – Newport Highway (Highway 20) in Lincoln County between milepoints 0.63 and 11.87. The proposed project involves roadway maintenance of the existing corridor. The project also includes repairs to a culvert located on Simpson Creek, a tributary of the Yaquina River.

The in-water work period for the Yaquina River, including Simpson Creek, is July 1 to September 15 (ODFW 2000). The in-water work period is designated to limit the direct impacts to fish species by timing work activities during periods of low abundance and minimal spawning, migration, and rearing.

Road Resurfacing and Safety Improvements.
ODOT proposes to resurface an 18.25 kilometer (km) section of Highway 20, from milepost 0.63 to milepost 11.87, including four bridges. For all four bridges approximately 100 millimeters (mm) of the existing surface would be ground off and then a 50 mm thick surface would be added back on. The bridges to be resurfaced along Highway 20 cross three small, fish-bearing streams in the lower Yaquina River watershed. These streams are Depot Slough, Beaver Creek, and Little Beaver Creek. ODOT proposes containment measures to prevent hazardous materials from entering the streams. This work would occur above the ordinary high water elevation of all of the streams.

Many of the existing guardrails along this section of the highway would be replaced or upgraded as a part of this project. The existing guardrail along Highway 20 has pilings spaced 7.6 meters (m) apart and the new guardrails would have pilings placed 3.8 m apart. In addition, 35 new guardrail flares would be added for this project to improve traffic safety, requiring approximately

14.4 m^2 of new pavement. In addition, five street approaches with areas of approximately 40 m^2 each would be paved. The total amount of new impervious surface area added to Highway 20 for this project would be approximately 705 m^2. Roughly 235,000 m^2 of impervious surface already exists within the 18.25 km project corridor.

Simpson Creek Culvert Installation.
The repair to the Simpson Creek culvert would consist of slip-lining the existing 2.9 m diameter corrugated metal pipe (CMP) with a 2.7 m diameter CMP. Due to water velocity constraints, the new CMP would need to be modified to reduce water velocities and improve fish passage. A simulated stream channel consisting of metric class 100 riprap to a depth of 450 mm would be placed in the CMP, along with eight 0.3 m steel weirs. To accomplish the proposed retrofit of the culvert, the entire work area would need to be isolated and dewatered to allow work in dry conditions. This design has been reviewed and approved by NOAA Fisheries' Hydro Division staff.

All vehicles and equipment used on the proposed project would be staged along Pioneer Mountain Loop Road approximately 45 m away from Simpson Creek, and in an area that has been previously disturbed and developed, to avoid degrading natural resources. ODOT would allow fueling of vehicles, storage of hazardous materials, or vehicle maintenance within 45 m of any wetland, waterway or the permitted work area only within a designated spill containment area, and with approval of the ODOT engineer.

Work Area Isolation/Fish Salvage.
The retrofit of the existing Simpson Creek culvert would require in-channel work below the ordinary high water elevation. To minimize adverse effects to anadromous fish and their habitat, the proposed work area would be isolated and dewatered. The culvert repair work would require approximately 14 days of work area isolation. All work area isolation plans would be subject to approval by ODOT Geo/Hydro Unit staff prior to initiation.

Isolation would begin with the installation of nets to block fish passage into the proposed work area. Once the nets are in place and functioning, fish salvage would occur using methods approved by Oregon Department of Fish and Wildlife (ODFW) and NOAA Fisheries for fish salvage operations. Following removal of all fish from the work area, two parallel sandbag dams lined with plastic would be placed 15 m upstream of the culvert inlet and 15 m downstream of the culvert outlet to isolate the work area from the flowing stream. These dams would span the entire width of the stream.

At night a diversion pipe with a minimum diameter of 300 mm would be used to divert water beyond the work area during construction. Water would be pumped around the isolated work area during regular work hours. At night, or after regular work hours, flow of Simpson Creek would be transferred from the pump system to a gravity-fed system. The pump system would only be used when workers are present on the site and available to monitor the system. Pumping would be necessary because the detour pipe would need to be located on the roadway to facilitate the work within the existing culvert. It would not be possible to install the new CMP with the

detour pipe routed through the existing CMP. Installation of the retrofit CMP would require in-channel work (below the ordinary high water elevation) up to 10 m upstream of the existing culvert inlet.

The gravity-fed system would include screens at both the inlet and outlet of the pipe that meet NOAA Fisheries' guidelines to exclude juvenile salmonid entry. Use of the gravity-fed system at night would allow continuous flow of water yet would not require the constant monitoring that would be required for the pump system. Fish would be excluded from the gravity-fed pipe at all times to ensure that no fish are injured when the flow of Simpson Creek is transferred from the gravity-fed system to the pump system each morning.

Trained and experienced ODOT or ODFW biologist(s) would monitor work area isolation, dewatering and fish salvage activities. A trained and experienced biologist would also be on site when water is reintroduced into the portion of the stream channel that was previously dewatered. The contractor would monitor the pump system and the gravity-fed system.

Slip-lining of Existing Culvert.
Installation of the new culvert lining would begin following work area isolation and fish removal. The existing culvert consists of a 41.2 m long, 2.9 m wide CMP. The existing CMP would not be removed; rather, a 2.7 m diameter CMP would be installed through the existing culvert in sections. A 75 mm spacing would be maintained between the existing pipe and the retrofit pipe during installation. Once installation of the retrofit pipe is completed, this spacing would be filled with cement grout to hold the retrofit pipe in place. The grout would take approximately 24 hours to cure. Water would not be reintroduced to the stream channel until the grout has cured completely.

All access to the project site for the installation of the new CMP would be from the east bank of the creek, immediately upstream of the culvert inlet. A short (< 30 m), temporary access road would be constructed on the east bank of Simpson Creek to provide access to the work area at the inlet of the Simpson Creek culvert. A small earthen platform would be constructed on an existing bench that is located just above the ordinary high water elevation. Access to the project site would require the removal of one alder tree (*Alnus rubra*) with a diameter at breast height of approximately 30 centimeters (cm), and the clearing of approximately 150 m^2 of riparian vegetation (primarily grasses and shrubs). Some minor excavation of the east side streambank of the creek would be necessary to provide clearance for installation of the new CMP and riprap, as well as construction of the access road.

Streambed Simulation.
The existing Simpson Creek culvert is a partial velocity barrier to upstream migration of salmonids. The existing culvert has a velocity at the ODFW standard of average water velocity at the high flow design discharge (Q10%) of 1.96 m per second (/s) at the culvert outlet. Slip-lining the existing culvert with a 2.7 m CMP without streambed simulation would result in a velocity at the Q10% discharge of 1.91 m/s at the culvert outlet. To improve fish passage through the Simpson Creek culvert, the retrofit CMP would include weirs and a simulated

streambed. The retrofit CMP would be installed with approximately eight steel weirs, each 30 cm high and spaced approximately 5 m apart. The purpose of the weirs is to backwater the pipe to an elevation of up to 30 cm. When backwatered, the water surface elevation at the inlet of the pipe would rise and inundate the channel habitat immediately upstream of the culvert inlet. This backwater could extend upstream as far as 7 m. This backwater area would likely serve as a depositional area for some sediment and larger bedload materials.

Metric class 100 riprap, 450 mm deep, would be placed within the retrofit pipe. Inspection of the channel and streambed materials by ODOT indicate that Simpson Creek has a dynamic substrate. In this dynamic system, transportation of natural bedload would likely fill some of the voids in the metric class 100 riprap. In addition, finer material, ranging from 25 mm diameter to silts or clays, would be added to the riprap during construction to help fill the voids. Five boulders, 150 to 250 kilograms (kg) each, would be placed every 10 m within the pipe to provide hydraulic cover for migrating fish. The installation of the simulated streambed would result in a velocity at the Q10% discharge of 1.39 m/s.

The outlet of the retrofit CMP would be lined with metric class 100 riprap to increase scour protection and provide a riffle transition out of the pipe. This roughened chute would be approximately 3.0 m long and 2.7 m wide for a total area of 8.1 m^2. Eight rocks150 to 250 kg in size would be placed among the riprap to provide hydraulic shadows to serve as fish resting areas and to help create backwater in the pipe.

Riprap and boulders would be stored above the platform prior to transport into the channel. A small, Bobcat-style front-end loader would be used to deposit riprap and boulders within the new pipe and at the culvert outlet. This piece of equipment would need to be small enough to operate within the retrofit culvert. The small front-end loader and the pumps to divert water around the project area would be the only mechanized pieces of equipment that would be allowed to operate within the stream channel of Simpson Creek. All riprap and boulders to be installed in the retrofit pipe and at the outlet would be lowered into the stream channel by a trackhoe operating from a platform constructed from an existing earthen bench above the ordinary high water elevation of the creek.

Water Reintroduction and Project Demobilization.
Following completion of the culvert repair, all equipment would be removed from the in-channel work area prior to reintroduction of the diverted flow of Simpson Creek to the main channel. Sediment collection measures would be installed at the downstream limit of the project area to contain much of the bedload that is displaced by the reintroduction of streamflow. All vegetated areas disturbed during construction (including the temporary access road) would be graded to the preconstruction dimensions, and seeded with an appropriate native seed mix.

1.3 Biological Information

Estimated escapement of coho salmon in coastal Oregon was about 1.4 million fish in the early 1900s, with harvest of nearly 400,000 fish (Weitkamp *et al.* 1995). Abundance of wild OC coho

salmon declined during the period from about 1965 to 1975, and has fluctuated at a low level since that time (Nickelson *et al.* 1992). Lichatowich (1989) concluded that current production potential (based on stock-recruit models) for OC coho salmon in coastal Oregon rivers was only about 800,000 fish, and he associated this decline with a reduction of nearly 50% in habitat capacity. Current abundance of coho on the Oregon coast may be less than 5% of that in the early part of this century. Recent spawner abundance in this ESU has ranged from about 20,000 adults in 1990, to near 80,000 adults in 1996, and an estimated 47,400 adult coho in 1999 (Jacobs *et al.* 2001).

Habitat-related factors for decline of OC coho salmon include channel morphology changes, substrate changes, loss of in-stream roughness, loss of estuarine habitat, loss of wetlands, loss/degradation of riparian areas, declines in water quality (*e.g.*, elevated water temperatures, reduced dissolved oxygen, altered biological communities, toxics, elevated pH, and altered stream fertility), altered stream flows, fish passage impediments, elimination of habitat, and direct take. The major activities responsible for the decline of coho salmon in Oregon are logging, road building, grazing and mining activities, urbanization, stream channelization, dams, wetland loss, beaver trapping, water withdrawals, and unscreened diversions for irrigation. OC coho salmon are not in immediate danger of extinction, but may become endangered in the future if present trends continue.

OC coho salmon spawn and rear in the Simpson Creek watershed. Juvenile coho salmon may occur in the project area during the early part of the in-water work period, during the end of the spring out-migration period.

1.4 Evaluating Proposed Actions

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402.14 (the consultation regulations). NOAA Fisheries must determine whether the action is likely to jeopardize the listed species. The jeopardy analysis involves the initial steps of defining the biological requirements and current status of the listed species, and evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NOAA Fisheries evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NOAA Fisheries must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action, (2) the environmental baseline, and (3) any cumulative effects. If NOAA Fisheries finds that the action is likely to jeopardize the listed species, NOAA Fisheries must identify reasonable and prudent alternatives for the action.

For the proposed action, NOAA Fisheries' jeopardy analysis will consider direct and indirect mortality of fish attributable to the action. NOAA Fisheries also will consider the extent to which the proposed action impairs the function of essential elements necessary for migration and rearing of OC coho salmon under the existing environmental baseline.

1.4.1 Biological Requirements

The first step in the methods NOAA Fisheries uses for applying the ESA to listed salmon is to define the biological requirements of the species most relevant to each consultation. NOAA Fisheries also considers the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NOAA Fisheries starts with the determinations made in its decision to list salmon for ESA protection and also considers new data available that are relevant to the determination.

The relevant biological requirements are those necessary for salmon to survive and recover to naturally-reproducing population levels, at which time protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment. Essential habitat features of the area for the species are substrate, water quality, water quantity, water temperature, water velocity, cover/shelter, food (juvenile only), riparian vegetation, space, and safe passage conditions.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful spawning, rearing and migration. The current status of the listed species in this consultation, based upon their risk of extinction, has not significantly improved since the species was listed and may have worsened.

1.4.2 Environmental Baseline

The action area is defined by NOAA Fisheries regulations (50 CFR 402.02) as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." For the proposed project the action area is defined as the Simpson Creek channel and adjacent riparian area extending upstream from the culvert outlet (approximately 10 m) to the edge of disturbance, and downstream to the confluence of Simpson Creek and the Yaquina River. Within the action area, Simpson Creek serves as a migration, spawning and rearing corridor for OC coho salmon.

Yaquina River Watershed.
As stated earlier, the proposed project is located on Highway 20 along the north bank of the Yaquina River. A number of tributaries to the Yaquina River lie within the footprint of the project corridor including: Beaver Creek, Little Beaver Creek, Depot Slough, Depot Creek, West Olalla Creek, Olalla Creek, Thornton Creek, and Simpson Creek. The confluence of Simpson Creek and the Yaquina River is located between Toledo and Eddyville, near the community of Chitwood, Oregon.

The Yaquina River watershed drains approximately 635 km^2. This coastal watershed is south of the Siletz River watershed and north of the Alsea River watershed. The Yaquina River is approximately 97 km long, and has one major tributary, Big Elk Creek, which is approximately 48 km long. The headwater reaches include densely forested and mountainous terrain.

The terrain in the project vicinity is generally steep and the valleys are incised primarily due to the geology of the region (CH2MHILL 1993). Hillside slopes range from 15 to 100%, while stream channel slopes range from 0.05 percent for the lower Yaquina River to a maximum of 40% in the upper stream channels of smaller tributaries (CH2MHILL 1993).

There are two major vegetation communities in the Yaquina watershed. The spruce/shore pine vegetation zone exists in the fog belt close to the ocean margin, while the hemlock/Douglas-fir community occurs further inland (Borgerson *et al.* 1991). Where human activity has been extensive, alder is often the dominant tree species. No major stands of old growth timber currently exist within the Yaquina watershed (Borgerson *et al.* 1991).

Snow is rare in the lower parts of the watershed and seldom lasts more than a few days in the higher elevations so most of the precipitation is in the form of rain. Average annual rainfall in Newport is 170 cm, while the headwater areas receive up to 280 cm of precipitation annually (Borgerson *et al.* 1991).

Water quality within the watershed ranges from poor to high. The Yaquina River and Big Elk Creek are listed for temperature on the 303(d) List of Water Quality Limited Water Bodies of the Oregon Department of Environmental Quality (ODEQ 1998). Big Elk Creek is listed for sediment, while the upper tidal portion of the Yaquina River (Rkm 8 to 19) is listed for bacteria. At times water quality problems exist within Yaquina Bay due to oil and other pollutants released by ships, boats, and various land uses (Borgerson *et al.* 1991). In general, streams within the upper reaches of the watershed have good water quality, although some reaches may have degraded waters due to agricultural practices or road building. These practices can affect stream sediment and contaminant loads.

Water quality problems from traffic-related pollutant loading from Highway 20 are likely negligible (CH2MHILL 1993). Stream flows of creeks potentially affected by the runoff of pollutants generated by vehicles using the highway surface are generally adequate to dilute the levels of pollutants generated in this manner (CH2MHILL 1993), however, accidents involving spills of contaminants directly into area streams are a potential threat to the aquatic resources located along Highway 20 (CH2MHILL 1993).

Aquatic habitat in the Yaquina River watershed has been altered by diking estuarine wetlands for agricultural uses, land clearing for development or agriculture, animal grazing, filling parts of the estuary for development, dredging the lower river channel for navigation, jetty construction for navigation, and logging for timber production (Borgerson *et al.* 1991). These changes affect habitat characteristics important to salmonids as well as other aquatic life by altering riparian areas and water quality (temperature, turbidity, and chemical contamination), habitat access (physical barriers such as culverts and dams), hydrology (peak/base flows, timing/quantity of flows), and habitat complexity (pool habitat, channel condition, and refugia) of the watershed. Despite these alterations to habitat, the Yaquina River watershed supports significant populations of a wide diversity of salmonid species (Borgerson *et al.* 1991).

The MidCoast Watershed Council prepared a sixth field watershed assessment that documented the physical habitat characteristics for salmonids in the Yaquina River and other watersheds in the Midcoast region of the Oregon coast (Garono and Brophy 2001). The study found that the Yaquina River watershed had higher than average pool frequencies as compared to other watersheds in the Midcoast region and that pool distribution was conducive for coho salmon rearing habitat (Garono and Brophy 2001).

A wide diversity of physical aquatic habitat types are found in the streams within the upper Yaquina River watershed. These include: Riffles, glides, straight pools, lateral pools, plunge pools, trench pools, dammed pools, rapids over bedrock, rapids with boulders, cascades over bedrock, steps and dry units (CH2MHILL 1993). Most of the streams within the upper Yaquina River watershed have potential habitat for spawning fish as well as habitat for aquatic invertebrates. The pools offer holding areas for adult fish and are important for rearing juvenile fishes (CH2MHILL 1993).

Simpson Creek Watershed.
Simpson Creek is a moderate gradient stream that meanders through multiple terraced valleys. Simpson Creek, located within the upper Yaquina watershed, covers an area of 12.0 km^2, and is 11.4 km in length. The confluence of Simpson Creek and the Yaquina River is approximately 2.5 km downstream of the proposed culvert repair area. Simpson Creek has two major tributaries upstream of the culvert repair work site, Twenty-three Creek and Cook Creek, both of which support OC coho salmon.

Simpson Creek is listed on the ODEQ 303(d) List of Water Quality Limited Water Bodies as a water body of potential concern for temperature due to data collected in 1994 from Rkm 0 to 4.8 (ODEQ 1998).

Substrate in the mainstem of Simpson Creek includes bedrock, but is typically dominated by gravels and cobble (CH2MHILL 1993). The average amount of large wood in Simpson Creek is 66 pieces/km (Garono and Brophy 2001), which is low.

A snorkel survey was conducted in 1998 that rated pool complexity in the Yaquina River watershed (Bio-Surveys 1998 cited in Garono and Brophy 2002). Pool complexity is a visual estimate based on the percent of the pool surface area that has cover from wood, large substrate, undercut banks, and overhanging vegetation. At a sixth-field scale, Simpson Creek has a low rating of complexity. The road density within the Simpson Creek watershed is 5.4 km/km^2 (Garono and Brophy 2001), which is high.

The Simpson Creek culvert may be a barrier to juvenile salmon during very high flows due to high water velocity (velocity at the Q10% discharge of 1.96 m/s at the culvert outlet). The ODFW standard of average water velocity at the high flow design discharge (Q10%) for adult salmon passage through a 30 to 60-m culvert pipe is 1.2 m/s (ODFW 1999). There are no barriers to fish migration within the lower segment of Simpson Creek below the project site.

The riparian areas along Simpson Creek consist primarily of red alder (CH2MHILL 1993). The average shade within the Simpson Creek watershed is high (93%) (Garono and Brophy 2001).

1.5 Analysis of Effects

1.5.1 Effects of Proposed Action

This analysis addresses effects to listed OC coho salmon that may result from this project given the conservation measures to be employed. These potential effects include reductions in water quality, changes in channel conditions and dynamics, alteration of stream flows, shifts in watershed condition, and direct harm to fish.

Water Quality.
The quality of the water that fish encounter on their migration is extremely important, and can determine such things as feeding and breeding success, disease, growth, and predation rates. Major elements of water quality critical to salmon that could be affected by the project are turbidity, suspended sediment, chemical contamination, and temperature. Turbidity and fine sediments can reduce prey detection, reduce substrate oxygen, smother redds, and damage gills, as well as cause other deleterious effects. Chemical contamination can reduce fecundity and fertility, increase disease, shift biotic communities, and reduce the overall health of migrating salmon. Temperature affects metabolic rates, resistance to disease, oxygen concentrations in the water, and other vital factors.

The effects of suspended sediment and turbidity on fish, as reported in the literature, range from beneficial to detrimental. Elevated total suspended solids (TSS) conditions have been reported to enhance cover conditions, reduce piscivorus fish/bird predation rates, and improve survival. Elevated TSS conditions have also been reported to cause physiological stress, reduce growth, and adversely affect survival. Of key importance in considering the detrimental effects of TSS on fish are the frequency and the duration of the exposure, not just the TSS concentration.

Behavioral avoidance of turbid waters may be one of the most important effects of suspended sediments (DeVore *et al.* 1980, Birtwell *et al.* 1984, Scannell 1988). Salmonids have been observed to move laterally and downstream to avoid turbid plumes (Sigler *et al.* 1984, Lloyd 1987, Scannell 1988, Servizi and Martens 1991). Juvenile salmonids avoid streams that are chronically turbid, such as glacial streams or those disturbed by human activities, unless the fish need to traverse these streams along migration routes (Lloyd *et al.* 1987).

Turbidity resulting from the proposed project will be confined to the construction and removal of the temporary structures, the removal of bents from the existing bridges, and the placement of a single bent for the new bridges.

Increases in suspended sediment and turbidity from the project would be minor and short-term, being limited to activities associated with work area isolation and culvert installation. Vegetation removal may reduce shade minimally, but any temperature increase would be

negligible, given the small area affected. Increased roadway area provides additional opportunities to collect and deliver lubricants, coolants and other pollutants released from automobiles. Erosion and sediment control and a pollution control plans specifying containment measures would be developed to minimize water quality effects, including chemical contamination due to asphalt-concrete application, lane painting and striping, and vehicle refueling and maintenance. All stormwater runoff will be allowed to fully infiltrate through existing vegetation prior to reaching Simpson Creek.

Stream Channel Conditions.
Riprap and changes in impervious surface area and are two elements of this transportation project that could directly affect channel condition and dynamics. The increase in erosion associated with riprap can lead to simplification and channelization of the stream.

The in-water work proposed will also alter the substrate in the river where the culvert and natural streambed material is placed. In the long term, the substrate will become more stable and even, due to the recruitment of natural streambed material and the backwater conditions within the culvert.

Stream Basin Hydrology.
The proposed culvert would have a hydraulic opening smaller than the existing culvert, however, the creek would not be constrained due to the original culvert being oversized. Due to the additional road flares for the guardrail there would be a small increase in impervious surface. Additional impervious surfaces can alter the water quality and hydrologic function, as well as the habitat complexity of a stream. The reduction in infiltration capacity can result in increases in peak and duration of flows during storm events, erosion, and reduced groundwater storage. These effects are likely to be negligible due to the small increase in impervious area and because all stormwater runoff will be allowed to fully infiltrate through existing vegetation prior to reaching Simpson Creek.

Harm and Harassment.
Direct harm to listed fish may occur due to fish removal from the work area and slip-lining the new culvert inside the existing culvert. Within the isolated work area, fish removal would occur. Isolation of the work area would have direct effects to ESA-listed OC coho salmon during the fish removal and relocation process. Direct harm to fish species may occur during handling, potentially including delayed mortality due to stress related to handling. The probability of harm once listed fish are removed is low because of containment measures. The work area would be isolated using a sandbag diversion, and a silt fence (as a secondary measure) would be employed to minimize turbidity effects. In addition, all work requiring disturbance of the Simpson Creek channel would be conducted during the ODFW-defined in-water work period, when few fish will be present.

NOAA Fisheries expects the construction of the new culvert using slip-lining to result in minimal disturbance of stream substrate, and therefore expects minimal displacement of sediment, although a short-term turbidity increase may occur in Simpson Creek. The short-term

increase in turbidity could temporarily reduce feeding efficiency for juvenile salmonids in the action area.

The preferred in-water work period for Simpson Creek is between July 1 and September 15. ESA listed fish are unlikely to be in the project area in high numbers during the in-water work period. Because of this, and because the in-water work will be isolated from the stream, NOAA Fisheries expects harm and harassment of juvenile OC coho to be minimal.

1.5.2 Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as those effects of "future state or private activities, not involving federal activities, that are reasonably certain to occur within the action area of the federal action subject to consultation." Future Federal actions, including the ongoing operation of hydropower systems, hatcheries, fisheries, and land management activities are being (or have been) reviewed through separate section 7 consultation processes. Therefore, these actions are not considered cumulative to the proposed action.

NOAA Fisheries is not aware of any specific future non-federal activities within the action area that would cause greater impacts to listed species than presently occurs. NOAA Fisheries assumes that future private and state actions will continue at similar intensities as in recent years.

1.6 Conclusion

After reviewing the status of the ESA-listed species, the environmental baseline for the action area, effects of the subject action, and cumulative effects, NOAA Fisheries has determined that the proposed highway resurfacing and replacement of a culvert on Simpson Creek is not likely to jeopardize the continued existence of OC coho salmon.

This determination is based in part on incorporation of best management practices (*e.g.* erosion control measures, timing restrictions) that would minimize these adverse effects, and also the following considerations: (1) Fish passage will be established for both adults and juveniles; (2) the anticipated effects on water quality, substrate quality and hydrologic functions would not be great enough in magnitude or duration to prevent or delay achievement of properly functioning habitat conditions in the action area; and (3) seasonal restrictions and work area isolation would ensure that the minimum number of fish possible would be affected by the proposed action.

1.7 Reinitiation of Consultation

This concludes formal consultation on these actions in accordance with 50 CFR 402.14(b)(1). The FHWA must reinitiate consultation if: (1) If the amount or extent of incidental take is exceeded, (2) if the action is modified in a way that causes an effect on the listed species that was not previously considered in the information provided by the FHWA and this Opinion, (3) new information or project monitoring reveals effects of the action that may affect the listed

species in a way not previously considered, or (4) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16).

2. INCIDENTAL TAKE STATEMENT

Section 9 and rules promulgated under section 4(d) of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. "Harm" is defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. "Harass" is defined as actions that create the likelihood of injuring listed species by annoying it to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. "Incidental take" is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the FHWA must comply in order to implement the reasonable and prudent measures.

2.1 Amount or Extent of the Take

NOAA Fisheries anticipates that the action covered by this Opinion is reasonably certain to result in a low incidence of non-lethal incidental take of listed species due to short-term habitat changes. Effects such as these are largely unquantifiable and are not expected to be measurable as long-term effects on population size. Therefore, even though NOAA Fisheries expects incidental take due to the actions covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NOAA Fisheries to estimate a specific amount of incidental take to the species itself. In instances such as these, NOAA Fisheries designates the expected level of take in terms of the extent of take allowed. NOAA Fisheries limits the extent of allowable take to take resulting from the proposed action that occurs from the upstream limit of the project area downstream for a distance of 30 m.

NOAA Fisheries also anticipates incidental take of OC coho salmon during work area isolation, and limits this to non-lethal take of 100 juvenile fish, and lethal take of five.

2.2 Reasonable and Prudent Measures

The measures described below are non-discretionary. They must be implemented so that they become binding conditions in order for the exemption in section 7(a)(2) to apply. The FHWA

has the continuing duty to regulate the activities covered in this incidental take statement. If the FHWA fails to require the applicants to adhere to the terms and conditions of this incidental take statement through enforceable terms that are added to the permit or grant document, or fails to retain the oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

In addition to the conditions proposed by the FHWA, the following reasonable and prudent measures are necessary and appropriate to minimize the likelihood of take of listed fish resulting from implementation of the project.

1. Minimize the likelihood of incidental take from in-water work by timing the completion of all in-water work to avoid harming vulnerable salmon life history functions, including migration and rearing.

2. Minimize the likelihood of incidental take from in-water work by ensuring that the in-water work area is isolated from flowing water.

3. Ensure effectiveness by requiring all erosion control measures and plantings for site restoration to be monitored and evaluated both during and following construction.

2.3 Terms and Conditions

To be exempt from the prohibitions of section 9 of the ESA, the FHWA must comply with the following terms and conditions, which implement the reasonable and prudent measures described above for each category of activity. These terms and conditions are non-discretionary.

1. To implement reasonable and prudent measure #1 (in-water timing), the FHWA shall ensure that:

    a. Timing of in-water work. Work within the active channel will be completed during the ODFW (2000) preferred in-water work period[1], as appropriate for the project area, unless otherwise approved in writing by NOAA Fisheries. This period corresponds with a time of year when the listed species is at low abundance.
    b. Cessation of work. Project operations will cease under high flow conditions that may result in inundation of the project area, except for efforts to avoid or minimize resource damage.

[1] Oregon Department of Fish and Wildlife, *Guidelines for Timing of In-Water Work to Protect Fish and Wildlife Resources*, 12 pp (June 2000) (identifying work periods with the least impact on fish) (http://www.dfw.state.or.us/ODFWhtml/InfoCntrHbt/0600_inwtrguide.pdf)

c. Fish screens. All water intakes used for a project, including pumps used to isolate an in-water work area, will have a fish screen installed, operated and maintained according to NOAA Fisheries' fish screen criteria.[2]

d. Fish passage. Passage will be provided for any adult or juvenile salmonid species present in the project area during construction, and after construction for the life of the project. Upstream passage is not required during construction if it did not previously exist.

e. Pollution and Erosion Control Plan. A pollution and erosion control plan will be prepared and carried out to prevent pollution related to construction operations. The plan must be available for inspection on request by NOAA Fisheries.

i. Plan Contents. The pollution and erosion control plan must contain the pertinent elements listed below, and meet requirements of all applicable laws and regulations.

(1) Practices to prevent erosion and sedimentation associated with access roads, stream crossings, construction sites, borrow pit operations, haul roads, equipment and material storage sites, fueling operations and staging areas.

(2) Practices to confine, remove and dispose of excess concrete, cement and other mortars or bonding agents, including measures for washout facilities.

(3) A description of any hazardous products or materials that will be used for the project, including procedures for inventory, storage, handling, and monitoring.

(4) A spill containment and control plan that includes notification procedures, specific clean up and disposal instructions for different products, quick response containment and clean up measures that will be available on the site, proposed methods for disposal of spilled materials, and employee training for spill containment.

(5) Practices to prevent construction debris from dropping into any stream or water body, and to remove any material that does drop with a minimum disturbance to the streambed and water quality.

ii. Inspection of erosion controls. During construction, all erosion controls must be inspected daily during the rainy season and weekly during the dry season to ensure they are working adequately.[3]

(1) If inspection shows that the erosion controls are ineffective, work crews must be mobilized immediately to make repairs, install replacements, or install additional controls as necessary.

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[2] National Marine Fisheries Service, *Juvenile Fish Screen Criteria* (revised February 16, 1995) and *Addendum: Juvenile Fish Screen Criteria for Pump Intakes* (May 9, 1996) (guidelines and criteria for migrant fish passage facilities, and new pump intakes and existing inadequate pump intake screens) (http://www.nwr.noaa.gov/1hydrop/hydroweb/ferc.htm).

[3] "Working adequately" means no turbidity plumes are evident during any part of the year.

(2) Sediment must be removed from erosion controls once it has reached 1/3 of the exposed height of the control.

f. Heavy Equipment. Use of heavy equipment will be restricted as follows:

i. Choice of equipment. When heavy equipment must be used, the equipment selected must have the least adverse effects on the environment (*e.g.*, minimally sized, rubber tired).

ii. Vehicle staging. Vehicles must be fueled, operated, maintained and stored as follows:

(1) Vehicle staging, cleaning, maintenance, refueling, and fuel storage must take place in a vehicle staging area placed 150 feet or more from any stream, water body or wetland.

(2) All vehicles operated within 150 feet of any stream, water body or wetland must be inspected daily for fluid leaks before leaving the vehicle staging area. Any leaks detected must be repaired in the vehicle staging area before the vehicle resumes operation. Inspections must be documented in a record that is available for review on request by NOAA Fisheries.

(3) All equipment operated instream must be cleaned before beginning operations below the bankfull elevation to remove all external oil, grease, dirt, and mud.

iii. Stationary power equipment. Stationary power equipment (*e.g.*, generators, cranes) operated within 150 feet of any stream, water body or wetland must be diapered to prevent leaks, unless otherwise approved in writing by NOAA Fisheries.

g. Site preparation. Native materials will be conserved for site restoration.

i. If possible, native materials must be left where they are found.

ii. Materials that are moved, damaged or destroyed must be replaced with a functional equivalent during site restoration.

iii. Any large wood[4], native vegetation, weed-free topsoil, and native channel material displaced by construction must be stockpiled for use during site restoration.

2. To implement reasonable and prudent measure #2 (isolation of in-water work area), the FHWA shall ensure that during pier removal, the work area is well isolated from the active flowing stream within a coffer dam, or similar structure, to minimize the potential for sediment movement.

[4] For purposes of this Opinion only, "large wood" means a tree, log, or rootwad big enough to dissipate stream energy associated with high flows, capture bedload, stabilize streambanks, influence channel characteristics, and otherwise support aquatic habitat function, given the slope and bankfull width of the stream in which the wood occurs. See, Oregon Department of Forestry and Oregon Department of Fish and Wildlife, *A Guide to Placing Large Wood in Streams*, May 1995 (www.odf.state.or.us/FP/RefLibrary/LargeWoodPlacemntGuide5-95.doc).

a. Isolation of in-water work area. If adult or juvenile fish are reasonably certain to be present, the work area will be well isolated from the active flowing stream using inflatable bags, sandbags, sheet pilings, or similar materials. The work area will also be isolated if in-water work may occur within 300 feet upstream of spawning habitats.

b. Capture and release. Before and intermittently during pumping to isolate an in-water work area, an attempt must be made to capture and release fish from the isolated area using trapping, seining, electrofishing, or other methods as are prudent to minimize risk of injury.

   i. A fishery biologist experienced with work area isolation and competent to ensure the safe handling of all ESA-listed fish must conduct or supervise the entire capture and release operation.

   ii. If electrofishing equipment is used to capture fish, the capture team must comply with NOAA Fisheries' electrofishing guidelines.[5]

   iii. The capture team must handle ESA-listed fish with extreme care, keeping fish in water to the maximum extent possible during seining and transfer procedures to prevent the added stress of out-of-water handling.

   iv. Captured fish must be released as near as possible to capture sites.

   v. ESA-listed fish may not be transferred to anyone except NOAA Fisheries personnel, unless otherwise approved in writing by NOAA Fisheries.

   vi. Other Federal, state, and local permits necessary to conduct the capture and release activity must be obtained.

   vii. NOAA Fisheries or its designated representative must be allowed to accompany the capture team during the capture and release activity, and must be allowed to inspect the team's capture and release records and facilities.

c. If the fish salvaging aspect of this project requires the use of electrofishing equipment to capture fish, it must be accomplished as follows (NOAA Fisheries 2000):

   i. Electrofishing may not occur near listed adults in spawning condition or near redds containing eggs.

   ii. Equipment must be in good working condition. Operators must go through the manufacturer's preseason checks, follow all provisions, and record major maintenance work in a log.

   iii. A crew leader having at least 100 hours of electrofishing experience in the field using similar equipment must train the crew. The crew leader's experience must be documented and available for confirmation; such documentation may be a logbook. The training must occur before an inexperienced crew begins any electrofishing; it must also be conducted in waters that do not contain listed fish.

   iv. Measure conductivity and set voltage as follows:

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[5] National Marine Fisheries Service, *Backpack Electrofishing Guidelines* (December 1998) (http://www.nwr.noaa.gov/1salmon/salmesa/pubs/electrog.pdf).

Conductivity (umhos/cm)	Voltage
Less than 100	900 to 1100
100 to 300	500 to 800
Greater than 300	150 to 400

v. Direct current (DC) must be used at all times.

vi. Each session must begin with pulse width and rate set to the minimum needed to capture fish. These settings should be gradually increased only to the point where fish are immobilized and captured. Start with pulse width of 500 us and do not exceed 5 milliseconds. Pulse rate should start at 30Hz and work carefully upwards. In general, pulse rate should not exceed 40 Hz, to avoid unnecessary injury to the fish.

vii. The zone of potential fish injury is 0.5 m from the anode. Care should be taken in shallow waters, undercut banks, or where fish can be concentrated because in such areas the fish are more likely to come into close contact with the anode.

viii. The monitoring area must be worked systematically, moving the anode continuously in a herringbone pattern through the water. Do not electrofish one area for an extended period.

ix. Crew members must carefully observe the condition of the sampled fish. Dark bands on the body and longer recovery times are signs of injury or handling stress. When such signs are noted, the settings for the electrofishing unit may need adjusting. Sampling must be terminated if injuries occur or abnormally long recovery times persist.

x. Whenever possible, a block net must be placed below the area being sampled to capture stunned fish that may drift downstream.

xi. The electrofishing settings must be recorded in a logbook along with conductivity, temperature, and other variables affecting efficiency. These notes, with observations on fish condition, will improve technique and form the basis for training new operators.

d. After completion of the project the existing channel should be re-watered in a way that will not significantly impact water quality or cause fish stranding.

i. Maintain the diversion pipe in place while slowly dismantling the upper and lower dams. This will allow the new channel to slowly water-up, while still maintaining flow in the lower channel below the project. Because the area above the upper dam has temporarily expanded usable habitat for fish, slowly ramping the water will allow fish to get back into the actual low-flow channel. A biologist shall be on site to monitor for fish stranding during this process.

ii. While pumping water around the work area, the flow downstream should match the flow upstream.

iii. While the diversion is in place the pipe must be screened at both ends to keep fish from entering the pipe. The maintenance of these screens must ensure that they do not clog causing inundation of the work area.

3. To implement reasonable and prudent measure #3 (monitoring and reporting), the FHWA shall ensure that:

   a. Within 120 days of completing the project, the FHWA shall ensure submittal of a monitoring report to NOAA Fisheries describing the FHWA's success meeting their permit conditions. This report will consist of the following information:
      i. Project identification.
         (1) Project name.
         (2) Type of activity
         (3) Project location, including any compensatory mitigation site(s), by 5th field HUC and by latitude and longitude as determined from the appropriate USGS 7-minute quadrangle map
         (4) The FHWA contact person.
         (5) Starting and ending dates for work completed.
      ii. Isolation of in-water work area, capture and release.
         (1) Supervisory fish biologist – name and address.
         (2) Methods of work area isolation and take minimization.
         (3) Stream conditions before, during and within one week after completion of work area isolation.
         (4) Means of fish capture.
         (5) Number of fish captured by species.
         (6) Location and condition of all fish released.
         (7) Any incidence of observed injury or mortality.
      iii. Pollution and erosion control. A summary of pollution and erosion control inspection reports, including descriptions of any failures experienced with erosion control measures, efforts made to correct them and a description of any accidental spills of hazardous materials.
      iv. Site restoration.
         (1) Finished grade slopes and elevations.
         (2) Log and rock structure elevations, orientation, and anchoring (if any).
         (3) Planting composition and density.
         (4) A five-year plan to:
            a. Inspect and, if necessary, replace failed plantings to achieve 100% survival at the end of the first year, and 80% survival or 80% coverage after five years (including both plantings and natural recruitment).
            b. Control invasive non-native vegetation.
            c. Protect plantings from wildlife damage and other harm.
            d. Provide the NOAA Fisheries annual progress reports.
      v. A narrative assessment of the project's effects on natural stream function.

vi. Photographic documentation of environmental conditions at the project site and compensatory mitigation site(s) (if any) before, during and after project completion.

(1) Photographs will include general project location views and close-ups showing details of the project area and project, including pre and post construction.

(2) Each photograph will be labeled with the date, time, photo point, project name, the name of the photographer, and a comment describing the photograph's subject.

(3) Relevant habitat conditions include characteristics of channels, streambanks, riparian vegetation, flows, water quality, and other visually discernable environmental conditions at the project area, and upstream and downstream of the project.

(4) The annual report will be submitted to:
NOAA Fisheries
Oregon Habitat Branch, Habitat Conservation Division
Attn: 2002/01267
525 NE Oregon Street, Suite 500
Portland, Oregon 97232-2778

3. MAGNUSON-STEVENS ACT

3.1 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established procedures designed to identify, conserve, and enhance essential fish habitat (EFH) for those species regulated under a Federal fisheries management plan. Pursuant to the MSA:

- Federal agencies must consult with NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH (§305(b)(2)).
- NOAA Fisheries must provide conservation recommendations for any Federal or state action that would adversely affect EFH (§305(b)(4)(A)).
- Federal agencies must provide a detailed response in writing to NOAA Fisheries within 30 days after receiving EFH conservation recommendations. The response must include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with NOAA Fisheries EFH conservation recommendations, the Federal agency must explain its reasons for not following the recommendations (§305(b)(4)(B)).

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting this definition of EFH: "Waters"

include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; "substrate" includes sediment, hard bottom, structures underlying the waters, and associated biological communities; "necessary" means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle (50 CFR 600.10). Adverse effect means any impact which reduces quality and/or quantity of EFH, and may include direct (*e.g.*, contamination or physical disruption), indirect (*e.g.*, loss of prey or reduction in species fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810).

EFH consultation with NOAA Fisheries is required regarding any Federal agency action that may adversely affect EFH, including actions that occur outside EFH, such as certain upstream and up slope activities.

The objectives of this EFH consultation are to determine whether the proposed action would adversely affect designated EFH and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH.

3.2 Identification of EFH

Pursuant to the MSA the Pacific Fisheries Management Council (PFMC) has designated EFH for three species of Federally-managed Pacific salmon: Chinook (*Oncorhynchus tshawytscha*), coho (*O. kisutch*), and Puget Sound pink salmon (*O. gorbuscha*) (PFMC 1999). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC 1999), and longstanding, naturally-impassable barriers (*i.e.*, natural waterfalls in existence for several hundred years). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the *Pacific Coast Salmon Plan* (PFMC 1999). Assessment of potential adverse effects to these species' EFH from the proposed action is based, in part, on this information.

3.3 Proposed Action

The proposed action is detailed above in section 1.2 of this document. The action area includes Simpson Creek, a tributary to the Yaquina River. This area has been designated as EFH for various life stages of chinook and coho salmon.

3.4 Effects of Proposed Action

As described in detail in section 1.5 of this document, the proposed action will result in short-term adverse effects to several habitat elements. These adverse effects are:

- Increased suspended sediment and turbidity from culvert installation,
- increased pollutant runoff,
- disturbance to stream substrate, and
- minor hydrologic alteration.

3.5 Conclusion

NOAA Fisheries concludes that the proposed action will adversely affect the EFH for chinook and coho salmon.

3.6 EFH Conservation Recommendations

Pursuant to Section 305(b)(4)(A) of the MSA, NOAA Fisheries is required to provide EFH conservation recommendations to Federal agencies regarding actions which are likely to adversely affect EFH. While NOAA Fisheries understands that the conservation measures described in the BA will be implemented by the FHWA, it does not believe that these measures are sufficient to address the adverse impacts to EFH described above. However, the terms and conditions outlined in section 2.3 are generally applicable to designated EFH for chinook salmon and coho salmon, and address these adverse effects. Consequently, NOAA Fisheries incorporates each of those measures here as EFH conservation recommendations.

3.7 Statutory Response Requirement

Pursuant to the MSA (§305(b)(4)(B)) and 50 CFR 600.920(j), Federal agencies are required to provide a detailed written response to NOAA Fisheries' EFH conservation recommendations within 30 days of receipt of these recommendations. The response must include a description of measures proposed to avoid, mitigate, or offset the adverse impacts of the activity on EFH. In the case of a response that is inconsistent with the EFH conservation recommendations, the response must explain the reasons for not following the recommendations, including the scientific justification for any disagreements over the anticipated effects of the proposed action and the measures needed to avoid, minimize, mitigate, or offset such effects.

3.8 Supplemental Consultation

The FHWA must reinitiate EFH consultation with NOAA Fisheries if the proposed action is substantially revised in a manner that may adversely affect EFH, or if new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations (50 CFR 600.920(k)).

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